

done is to recognise its existence by adopting the French compromise. And, by the way, this is by no means French except in name, for in 1828 Sir George Smart, then conductor of the Philharmonic, adopted what was practically the same pitch in England, and the greater number of so-called Philharmonic forks sold down to thirty years ago gave the C of the later French pitch. It has left its impress, too, on numerous organs which during this period were tuned to "Smart's pitch," as it was then called. It is in fact a long tried English pitch, displaced only by accidental circumstances during Costa's conductorship of the Philharmonic. In France its use is universal, in Germany it was generally accepted, though a fresh rise is there perceptible; in Madrid it has lately been adopted, and even in Belgium, the only country in Europe which approaches the English heights of pitch, a recent commission reported in its favour for both concerts and military bands. Finally, the enormous inconvenience felt by singers accustomed to this pitch, when coming over for a London season or special concerts (as at the recent Wagner festival, according to Wagner's own statement), have induced the Covent Garden Opera to revert to it again this season, so that musicians will have an excellent opportunity of judging of its effect.

A strong argument usually brought against a change of pitch is the difficulty of getting new brass and wood instruments. The French pitch has now lasted long enough for good instruments to be made in it, and it is in fact more easy, out of London, to obtain instruments in that pitch than in any other. But considering that it was used in England and in France for about twenty years prior to 1850, and that the bands accommodated themselves to the gradual change then, there seems no reason why they should not do so now. Organs present a difficulty, but no mercy should be shown to them. Organs sharpen so much by temperature in a concert room crowded or lighted up, or in summer, that it is really inhuman to build organs that even at mean temperatures strain the voice of a singer of Handel to follow. They are essentially solo instruments. French pitch is the highest admissible pitch for organs which have to lead voices, and these which are sharper should be flattened forthwith. Church organs are even now usually constructed but a trifle sharper than French pitch. As for pianos, it is well known that the concert grand pianos improve in richness and quality of tone by being brought down to French pitch. It is a mere matter of stringing and tuning, not of construction.

Besides the importance of having a uniform pitch to the singer and the manufacturers of instruments, there is a theoretical advantage to the listener. With equal temperament when properly carried out, the relations of the intervals in different keys remain precisely the same, and the effect of change of key therefore is due to the change of pitch of the tonic and its related notes. When the ear is accustomed to one pitch it easily recognises the key. When the pitch varies from time to time and place to place, the sense of key becomes deadened and lost, and even the most experienced ears become confused. Hence, both theoretically and practically, uniformity of pitch is imperative. Practically an intermedie pitch between the old pitch of Handel, Haydn, Mozart, and Beethoven, and the new pitch of Mendelssohn, Costa, and Verdi, is

the only one feasible to allow of both kinds of music being played by one organ or one band. And such a pitch is the French, the pitch of all French and most German modern music, the pitch in which the works of Wagner can alone be properly heard.

FARMING

Farming for Pleasure and Profit. Fourth, Fifth, and Sixth Sections. By Arthur Roland. (London: Chapman and Hall, Limited.)

THE publication of a work bearing such a title, naturally commands special attention at a time when farming is looked upon as anything but a pleasant and profitable business. Although it is evidently written by one practically acquainted with agricultural operations, a perusal unfortunately shows that it is very imperfectly adapted for meeting the needs of farmers in times of difficulty like the present. It has a great defect in its oversight of many of the improvements which have been introduced during the last twenty or thirty years, so much so, indeed, as to lead to a doubt whether there has not been a clerical error in the date of publication, and 1880 substituted for 1850.

The Fourth Section of this work is devoted to "Stock Keeping and Cattle Rearing." The economical production of pork is evidently one of the details of practice on which the author prides himself. He says, "Nettles grow in great profusion in our hedges, the somewhat sandy soil which chiefly prevails apparently being favourable to their growth. These I have all cut down with a bill-hook by one of the men, and they are brought to the pigstyes—unless we boil some up with other green stuff, which we do when they are young—and the pigs eat the nettles as freely as they will cabbages. My economical contrivances in this way, as may be expected, provoked the scorn of the labourers at first, and does at all times upon the occasion of a new man being engaged; but the success of the plan has been proved to demonstration, over and over again, to my old hands, who have got into my ways and system, and it is upon the adoption of these economical contrivances that the profits of farming mainly depend."

If this were true clean hedgerows are a great mistake, and uncultivated weeds have been sadly undervalued, hence, possibly, even the present depression in agriculture. But the author has evidently not acted upon the advice which he subsequently gives, for he says: "The old labourers of a district are often better acquainted with the peculiarities of the soil and other matters, the result of long observation, than the farmer himself; and although it is by no means necessary to act upon their advice, which would often mislead and cause ignorance and prejudice to reign instead of sound principles, yet there is often much that may be learned from them and turned to profitable account." Practical experience, whether obtained by the labourer or by the farmer, is undoubtedly of great value, and should be justly prized; but it is open to question whether the author has here shown that discretion will not allow "ignorance or prejudice to reign instead of sound principles."

In dealing with our various breeds of cattle the author falls into some grievous errors; for example, he remarks

that the North Devon cattle "do not possess any particular qualities as stock animals for the grazier or feeder;" and in reference to the Hereford cattle, says: "They are seldom met with out of their native district; and . . . it is doubtful whether the partiality they have succeeded in exciting with some persons does not arise from unjustified preference." Rarely, if ever, has any writer upon agriculture expressed views on this subject with less judicial care than has been shown in these quotations. The Shorthorns, which are evidently the author's favourites, have undoubted merits and many staunch advocates, but they have no monopoly of those good qualities which distinguish our improved breeds of cattle; and thus throughout the world Herefords and Devons become competitors with the Shorthorns, and in many cases successful competitors.

The Fifth Section includes "the Drainage of Land, Irrigation, and Manures." The action of burnt lime in the soil is probably as commonly understood by those who have given any attention to the use of manures as the action of any one of our fertilisers. Instead of giving any distinct and useful information upon the subject the author contents himself by such explanations as the following:—"Upon sandy soils, which seldom abound to any considerable extent in vegetable matter, the mechanical action of the ('burnt') lime is to combine with the finer particles of the soil and thus give additional consistency to the staple of the land; attracting the moisture from the atmosphere, it causes it to be less liable to be hurt by drought in those seasons when the crops suffer so greatly upon sandy soils, exercising a cooling influence upon hot land, although the lime itself be hot and of a warm nature to a cold soil. Upon these dry soils, however, it is necessary to give liberal dressings of putrescent manures, for seeds could obtain no nourishment from either the lime or the sand."

Here then we have an extraordinary mixture of ideas, arising from the action of burnt lime being confused with lime which has not been burnt, as, for instance, when chalk or marl has been used. The author is fully sensible of the important influences of manures, for he remarks: "The whole subject of the proper application of manure is one of the most important departments of successful husbandry, as is generally acknowledged, yet, unfortunately, in only too many instances is it one that is very much neglected beyond the most ordinary system of 'rule of thumb,' followed according to the 'custom of the country' which may prevail in each shire." Surely no stronger plea could have been advanced for the author giving his readers some clear explanation of the action of various manures, so as to aid them in exercising their thoughts on the subject, rather than simply following "the custom of the country." In this respect the work is certainly very defective.

The Sixth Section deals with "the Labourer, Root-Growing, and Hops." Of the various suggestions given for the benefit of the labourer, the author certainly deserves credit for one novelty. He proposes that, "instead of allowing the men to keep pigs themselves, let the smallest out of a litter be given to each man as they come round—not the smallest pig that is born, for this particular pig would be found to thrive in a mysterious manner, so that he overtook and beat all the others—but the smallest when

they are killed or sold. By this means all the pigs will make equal progress, and an arrangement of this kind will cause an extraordinary amount of interest in the various kinds of stock." We may certainly take it for granted that none of the labourers on the farm would have any objection to such an arrangement, but it is by no means equally obvious how the men who are attending to the horses, or engaged on the land, can contribute to the welfare of the pigs, except by contributions of corn intended for the horses, or by supplies of nettles from the hedgerows.

With curious inconsistency the author almost immediately after, in noticing the importance of a supply of milk, remarks, "The milk should be sold at a cheap rate, *not given*, so that the independence and self-respect of the labourer is preserved." In this latter recommendation we cordially agree; but is the larger gift of a pig of such a thoroughly substantial and consolatory character as to prevent any loss of self-respect? It would doubtless be a matter of rare occurrence, but however frequent it might be, if the master should find it consistent with the pleasure and profit of farming, the labourers would probably not complain at their independence being thus far overlooked. It is undoubtedly desirable to promote feelings of independence and self-respect amongst labourers, but we fail to detect in this section any indications of a definite policy likely to lead to this result.

The chapter on the growth of Hops is the most valuable of the entire series, and is quite a redeeming feature in the work. Nor must it be supposed that other parts of the several sections are devoid of merit; on the contrary, the work contains many valuable statements, which manifestly come from a mind practically acquainted with some of the subjects brought under consideration. It is however much to be regretted that these grains of good corn have not been more perfectly winnowed, so as to present a purer and more marketable sample to the public.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*]

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

Mr. A. R. Wallace's "Australasia"

ALTHOUGH somewhat late in the day, I beg to offer a few remarks on this work supplementary to the critique which appeared in the columns of NATURE, vol. xx. p. 598. The facts that "Australasia" is the only compendious work which we have in English on the subject of which it treats, and that the high authority of Mr. Wallace's name will be equivalent with the majority of readers to a guarantee for the accuracy of the maps and letter-press, render it important that such errors as exist in the book should be rectified at once. For this reason I venture to make the following brief observations on those sections of the work treating of the Philippines and Borneo, with which districts I chance to be personally familiar.

I. In the map of the Philippines the islands of Sulu and Balabac, and the halves of the islands of Palawan and Mindanao, are shown as Mahometan native states, whereas they are all as undoubtedly Spanish possessions as is the interior of Luzon. In Barilan the Spanish have long had a naval station and arsenal; at Port Royal they have a naval station and penal settlement; and the same at Balabac; and they have within the last few years firmly possessed themselves of the chief Sulu island. They